STATE OF CALIFORNIA

Energy Resources Conservation And Development Commission

In the Matter of:	)	Docket No. 01-AFC-19
	)	
Application for Certification of SMUD's Cosumnes Power Plant Project	)	**Staff's Opening Brief on the First Evidentiary Hearing**
	)	
	)	May 28, 2003

INTRODUCTION

On May 16, 2003, the Cosumnes Power Plant Project (CPP) Committee (Committee) issued a **Briefing Order** (Order) for the CPP. That Order established a filing date for staff and the applicant, Sacramento Municipal Utility District (SMUD), of May 28, 2003 for Opening Briefs on issues addressed during the first set of evidentiary hearings. This is staff's Opening Brief, addressing all technical areas except Biological Resources, Alternatives, and portions of Public Health and Air Quality.

This proceeding was initiated when SMUD filed an Application for Certification (AFC) for a proposed nominal 1,000-megawatt (MW) natural gas-fired, combined-cycle electric generating facility on September 13, 2001. The proposed CPP site is approximately 25 miles southeast of the City of Sacramento, at the site of the Rancho Seco Nuclear Plant (which is currently being decommissioned). SMUD is proposing to build the project in two 500 MW phases, with the first phase commencing construction in 2003 and commercial operation in 2005. SMUD will decide in 2003 whether to seek approval of Phase 2. Although only the first 500 MW are actually being considered for licensing at this time, staff has analyzed both phases to the extent that sufficient information was available. Staff's analysis did not address Phase 2 in the areas of Air Quality, Transmission System Engineering, and Water and Soil Resources.

Upon completion of the discovery phase of the AFC process, staff prepared Part 1 of the Final Staff Assessment (FSA Part 1), which contains its final analysis of 19 technical areas. This was

published on February 11, 2003. On February 28, 2003, staff published Part 2 of the FSA (FSA Part 2), which contained staff's assessment of Water and Soil Resources. Two areas -- Biological Resources and Alternatives -- were deferred because SMUD had not provided a complete Biological Resources Assessment to the U.S. Army Corps of Engineers, which is necessary to initiate consultation under the federal Endangered Species Act.[1]

On March 13, and 14, 2003, the Committee conducted hearings at which the FSA Parts 1 and 2, staff's supplemental testimony, the AFC and its supplements, all data responses provided by SMUD, additional testimony of SMUD, and testimony of Intervener Ms. Kathy Peasha were entered into evidence. Areas that were uncontested include: cultural resources; socioeconomics; transmission line safety and nuisance; worker safety and fire protection[2]; facility design; geology, mineral resources, and paleontology; waste management; public health; power plant efficiency; power plant reliability; and transmission system engineering. With respect to these topics, staff respectfully recommends that the Committee adopt the Conditions of Certification identified in the AFC and modified through staff's supplemental testimony filed March 12, 2003.

In addition, staff recommends that the Committee also adopt the three new proposed Conditions of Certification which the Committee requested at the March hearings, and which were filed on May 9, 2003. These conditions were drafted by staff and SMUD at the request of the Committee. The first addresses concern expressed by the Committee and by Intervener Ms. Peasha about the safety of schoolchildren during construction of the CPP and requires that all workers receive training about the specific hazards associated with the transportation route that will be used for construction of the CPP. The second Condition of Certification responds to Intervener Ms. Peasha's concern about the possibility of an underground storage tank in the vicinity of the detention basin and requires remote sensing in that area prior to construction. The third identifies additional noise mitigation that the Committee requested at the March hearings.

[1] Staff filed those sections as the FSA Part 3 on April 24, 2003.

[2] The Committee raised questions about this topic at both sets of evidentiary hearings, and has directed SMUD to work with the local fire protection agencies to establish a specific list of measures needed to mitigate the incremental effects of the project on local public safety services.

ARGUMENT

Contested topics at the March hearings included air quality, hazardous materials management, land use, visual resources, visible plumes, and traffic and transportation.[3] The applicant supports all staff Conditions of Certification except with respect to two topics in air quality: the appropriate ammonia slip level, and the wording of several construction Conditions of Certification. Intervener Ms. Peasha did not file any expert testimony in the area of air quality. In the area of hazardous materials, Intervener Ms. Peasha questioned the efficacy of staff's proposed **HAZ-8**, which imposes certain requirements for the transportation of aqueous ammonia. The applicant's conclusions in the area of land use were also disputed by Intervener Ms. Peasha, whose witness testified that the use of the laydown area was inconsistent with Sacramento County General Plan, as it is designated agricultural with a resource conservation overlay. Although Intervener Ms. Peasha directed her testimony to SMUD, staff will respond to that issue in this brief because our conclusions are the same as SMUD's. Intervener Ms. Peasha also appeared to dispute staff's conclusions with respect to visual resources and visible plumes, although she did not provide any testimony on this subject.

In addition, Intervener Ms. Peasha also raised concerns about the potential presence of an underground storage tank on the CPP site. Staff and SMUD have drafted a Condition of Certification to require remote sensing in the area of the detention basin. Finally, Intervener Ms. Peasha provided testimony on the issue of traffic and transportation indicating that any increase in traffic levels will cause a risk of accidents. Staff and SMUD drafted a Condition of Certification to respond to the Committee's suggestion that this issue be addressed by requiring worker training about the transportation hazards that will exist on the roads used for construction activities. These issues appear to be resolved and are not addressed in this brief.

[3] Intervener Ms. Peasha indicated at the Prehearing Conference that she intended to file testimony in the areas of Noise and Vibration (raising concerns about the accuracy of ambient noise monitoring), Compliance, and Water and Soil Resources (raising concerns about the design of the drainage structures and detention basin, as well as potential radioactive materials on site). However, she neither filed any testimony on these topics, nor conducted any cross examination; we therefore assume that these are not contested topics.

I. THE EVIDENCE IS UNCONTROVERTED THAT AN AMMONIA SLIP LEVEL OF 5 PPM IS FEASIBLE AND WILL REDUCE SECONDARY PARTICULATE FORMATION, AND IT SHOULD THEREFORE BE REQUIRED.

The most significant disagreement between staff and SMUD concerns the level of "ammonia slip" that should be permitted. Ammonia slip refers to the release into the atmosphere of unreacted ammonia as a result of the selective catalytic reduction (SCR) process used to control NO_x emissions from the project. (2/11/2003 FSA Part 1, p. 4.1-11) The Final Determination of Compliance (FDOC), prepared by the Sacramento Metropolitan Air Quality Management District (SMAQMD), identifies an ammonia slip level for the project of 10 ppm. (8/27/2003, FDOC, p. 27) The evidence is uncontroverted that 10 ppm is equivalent to approximately 600 pounds of ammonia per day. (2/11/2003 AFC, p. 4.1-11). Staff recommends that ammonia slip be limited to 5 ppm, because it has the potential to contribute to secondary particulate formation. SMUD opposes staff's recommendations for three reasons. First, the SMAQMD has included the higher limit in the FDOC. Second, SMUD claims that the area is ammonia-rich, which reduces the potential that ammonia slip will contribute to secondary particulate formation. Third, SMUD claims that a lower level is not cost-effective.

It is important to note that there is no dispute that a 5 ppm ammonia slip level is feasible. The Energy Commission has licensed several projects with a 5 ppm ammonia slip level. The South Coast Air Quality Management District has determined that Best Available Control Technology (BACT) for ammonia is 5 ppm, and has included that limit (along with a NO_x BACT level of 2 ppm) in FDOCs for two other projects currently before the Energy Commission. In addition, the California Air Resources Board explicitly recommends that districts consider a 5 ppm level in licensing power plants. (Guidance for Power Plant Siting and Best Available Control Technology, 1999, p. 12) Finally, the applicant's own witness indicated that the difference between a 5 ppm limit and a 10 ppm limit for this project is merely that the former would require that the catalyst be replaced more often. (3/13/2003 RT, p. 118:7-11) And, although the applicant's witness at one point stated that secondary particulate formation is "better" controlled through reduction in NO_x and SO_x emissions (SMUD's Group 1 Testimonies, docketed March 3, 2003), he later agreed that the Committee does not need to pick between lower NO_x and lower ammonia slip levels. (3/13/2003 RT, p. 73:12-15) Both are feasible.

Therefore, the only question is whether the Committee *should* require the lower ammonia slip level. Applicant's witness stated that staff is suggesting, "that because it can be done it should be done." (*Id*. at p. 114:9-11) Staff disagrees with this characterization. In fact, each of the three reasons, identified above, that SMUD offered as support for allowing the higher ammonia slip level is contradicted by the evidence presented by staff during the March hearings. A careful review of this evidence indicates that a 5 ppm level is justified and should be required in order to ensure that ammonia slip does not contribute to significant adverse impacts from secondary particulates.

At the outset, we acknowledge that the FDOC allows ammonia slip to be 10 ppm. However, the SMAQMD witness stated that the level is based on concern for ammonia as a toxic substance; the potential for secondary particulate formation from ammonia emissions was *not* considered at all.[4] (3/13/2003 RT, p. 25:8-12) SMAQMD does not impose BACT requirements for ammonia, and the limit contained in the FDOC does not reflect the potential for secondary particulate formation from ammonia slip.[5] Therefore, under its responsibilities pursuant to the California Environmental Quality Act (Pub. Resources Codes, § 21000 et seq.), the Energy Commission must determine whether the potential of ammonia slip to contribute to secondary particulate formation constitutes a significant adverse impact.

The SMAQMD area is non-attainment for PM10 and is likely to be non-attainment for PM2.5. (FSA Part 1, p. 4.1-8) The ambient air quality standards on which these non-attainment designations are based are designed to prevent adverse health impacts; ongoing violations of the standards mean that many people in the Sacramento area are already exposed to unhealthy levels of particulates. The project's ammonia slip is likely to lead to particulate exposure that may exacerbate this situation. Staff therefore recommends that the Committee require mitigation of these potential impacts by reducing the allowable ammonia emission rate.

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[4] When asked whether there is a potential for secondary particulate formation, the SMAQMD witness replied that there could be, but that he didn't know what it is. (*Ibid*.)

[5] In contrast, in SCAQMD, where a BACT level for ammonia has been established, that level is 5 ppm. (FSA Part 1, p. 4.1-16)

Staff also acknowledges that the area may be ammonia rich, and that the project's contribution to secondary particulates may be less than if the ambient air contained less ammonia. However, this does not mean that this potential is insignificant. SMUD's own witness testified that the project's ammonia emissions will contribute to secondary particulates. (3/13/2003 RT, p. 70:1-3) Although he didn't calculate the amount of the contribution, staff did, and concluded that even in an ammonia rich area, an ammonia slip level of 10 ppm could result in 800 to 1,400 extra pounds *per day* of secondary particulates. (FSA Part 1, p. 4.1-15) Given the relatively poor ambient air quality in the area, staff urges the Committee not to ignore this level of potential impacts and to require mitigation.

Finally, although SMUD claims that a 5 ppm ammonia slip level is not cost-effective, it offered no evidence to support this claim. Absent a showing that the costs associated with the lower level render the project economically unviable, staff believes that the project's ammonia emissions should be mitigated. Staff acknowledges the uncertainty associated with ascertaining exactly how much additional secondary particulate can be attributed to this project. However, staff has addressed that issue in an appropriate fashion by asking for reductions in ammonia emissions rather than asking for emission reduction credits (ERCs) for the potential increases in secondary particulates. A reduction in ammonia emissions from 10 ppm to 5 ppm lessens the potential for such contribution without having to ascertain an appropriate number of ERCs to obtain.

In sum, the evidence in this case indicates that ammonia slip may contribute to a substantial amount of secondary particulate formation. Because area residents are already exposed to unhealthy levels of particulates, and because the SMAQMD has not addressed the contribution of the project to particulate levels from ammonia slip level identified in the FDOC, the Committee should require mitigation. Given the certainty of the debate about the exact amount of the project's contribution, a reasonable approach is to require minimization of the impact by reducing the permitted ammonia slip emissions by half. This approach is feasible and will significantly reduce the potential for significant effects from ammonia slip. Staff urges the Committee to adopt a 5 ppm ammonia slip limit.

II. STAFF'S PROPOSED CONDITIONS OF CERTIFICATION REDUCE THE RISKS ASSOCIATED WITH AMMONIA TRANSPORTATION TO AN EXTREMELY LOW LEVEL.

After the FSA was published, staff conducted a public workshop to discus additional concerns raised by the applicant and interveners. At that workshop, staff agreed that a change to its originally proposed **HAZ-8** was appropriate. The original **HAZ-8** would have required the use of a lead vehicle equipped with fog lights any time hazardous materials (i.e. ammonia) in quantities greater than 1,000 gallons are transported from Interstate 5 or State Route 99 to the site. The new language requires avoidance of hazardous materials deliveries at any time when children are arriving or departing the Arcohe School or when they are outside. In addition, from November through April, drivers of hazardous materials must ascertain whether fog conditions exist along the route and if they do, postpone delivery until the fog has lifted or until a lead vehicle with fog lights is available to escort the vehicle containing hazardous materials to the site.

As staff explained in its supplemental testimony, filed March 12, 2003, the new language is both consistent with the approach used in other Energy Commission licensing cases and will result in a transportation risk that is insignificant. Intervener Ms. Peasha conducted cross-examination on the adequacy of the measure, raising questions about the accuracy of CALTRANS highway Information Network for the entirety of the route from the highway to the project site. However, Intervener Ms. Peasha fails to recognize that **HAZ-5** requires the use of a specific type of transport vehicle for the transportation of hazardous materials. (FSA Part 1, p. 4.4-21) Staff testified that drivers of hazardous materials vehicles of the type required by **HAZ-5** are highly trained and that the accident rates associated with drivers of these vehicles are extremely low. (3/13/2003 RT 205:10 – 15) Thus, the drivers of these vehicles would be expected to respond to unanticipated fog conditions in a way that would not compromise the safety of the vehicle. (*Ibid.*) Intervener Ms. Peasha offered no testimony that contradicted staff's conclusion, and staff encourages the Committee to find that **HAZ-5** and **HAZ-8** will ensure that the project will not create a significant adverse impact due to the transportation of hazardous materials. Staff also encourages the Committee to adopt the other conditions of certification for hazardous materials

management, which were uncontested. (2/11/2003 FSA Part 1, pp. 4.4-20-4.4-22; 3/12/2003 Supplemental Testimony, pp. 40-42)

III. USE OF THE LAYDOWN AREA DOES NOT CREATE A LAND USE CONFLICT.

A witness for Intervener Ms. Peasha claimed that the use of the laydown area, south of the site, is inappropriate, because it may be "fundamentally incompatible with the land use designation in the area." (3/14/2003 RT, p. 214:18-21) However, this testimony ignores the fact that on September 25, 2002, the Sacramento County Board of Supervisors adopted the recommendations contained in a September 20, 2002 staff memo, including a determination that the project is consistent with the General Plan Map and Policies. (County of Sacramento Inter-Departmental Correspondence to the Board of Supervisors from the Planning and Community Development Department on the SMUD Cosumnes Power Plant and Gas Pipeline General Plan Consistency, September 24, 2002 Agenda, 11:00 a.m., September 20, 2002)

In addition, after the March hearings, the County again confirmed the project's consistency with the General Plan, specifically identifying the Resource Conservation Overlay Land Use category on the Sacramento County General Plan Land Use Map that is applicable to the laydown area. (Letter of Robert Burness to Kristy Chew, April 10, 2003) Thus, there should be no dispute that the use of the laydown area for the proposed project is consistent with the applicable land use designation. Staff encourages the Committee to concur with the County's determination in the Presiding Member's Proposed Decision.

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CONCLUSION

In conclusion, staff recommends that the Committee adopt the proposed conditions of certification identified by staff in all areas except biology, which we will brief later. These conditions will ensure that the project is constructed and operated in a manner that complies with applicable laws and protects environmental quality.

Date: May 28, 2003

Respectfully submitted,

CARYN J. HOLMES
Attorney for Energy Commission Staff

1516 9th St.
Sacramento, CA 95814
Ph: (916) 654-4178
e-mail:cholmes@energy.state.ca.us